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Performance of Private Enterprises Under the Background of New Round of Expansion of State-Owned Enterprises

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Abstract

In this paper, we used the super-efficient DEA method to analyze the performance of Chinese private enterprises. Talked 100 best private enterprises from 2008 to 2012 in China as the representative, we analyze the performance of private enterprises. The results showed that the efficiency levels of the private enterprises had continuously improved from 2008 to 2012, but the overall efficiency level of the private enterprise was lower. There existed large different among the private companies, and nearly half of the efficiency values of the enterprises were at 0.7658 or less. Therefore, the state should pay more attention to the living environment of the private enterprises, the private enterprises should play its due the potential to promote the country's sustainable development.

Key words: Corporate performance; Super-efficient DEA technology; Private enterprise

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INTRODUCTION

Since 2009, along with the Chinese government bailout policies, China's economy has emerged in the increasingly strong "country back into" wave. To circumvent the impact of the financial crisis, the Chinese government launched a 4 trillion Yuan investment plan. In capital markets, the deep pockets of large state-owned enterprises have entering the construction industry and setting off a craze. After central enterprises Hengtian Group spent 68 million to purchase the 20% stake of the real estate development company of Langfang Hengsheng, The group spent 180 million Yuan to win 30% stake of Langfang Galleria estate in 2009. Private enterprises in estate industry continue to retreat. In recent years, there are two thousand and twelve business license of real are revoked, of which 90% are private enterprises. In addition to real estate enterprises, there exists phenomenon of "the country back into" in other industries such as steel, aviation, coal and food industries. Such as Rizhao in Shandong Iron and Steel Group steel company mergers and acquisitions, United Eagle Airlines Sichuan Airlines Holdings, Shanxi coal restructuring and White COFCO Mengniu Dairy Company Limited and so on. An important reason of this trend was that most of the bailout money went to these state-owned enterprises, large state-owned enterprises, especially state-owned monopoly, and regardless of funding, resources and other aspects of government policy has played a strong position. Since the central propose four trillion strategic initiatives to expand domestic demand, more than 90% investment have gone into the state-owned enterprises. While private enterprises have no way to share four trillion pies. Private enterprises not only don't assigned the cake, but also a series of events were suppressed, such as coal mines in Shanxi Call Event, Shandong Iron and Steel was acquired private recipients, etc.

State-owned enterprises are growing more and more, while, private economic is being marginalize. Some state-owned enterprises and private enterprises discuss the reorganization that the surface is combined with private enterprise, in fact, the state-owned enterprise mergers and private enterprises, private enterprises continue to squeeze

the living space. Private enterprise has indisputably become an important component of the socialist market economy. First, private enterprises show the public economy irreplaceable role. They fully mobilize the enthusiasm of the producers in the economic and social development, and promote the development of productive forces. The private absorbed a large number of urban and rural employments, and reduce social pressure. Secondly, the establishment of a socialist market economic system is inseparable from the development of private enterprises. Private enterprise as a non -public economy, which naturally compatible with the market economy, mutual development conditions , all of its production and business activities must be to achieve through the market. Therefore, the establishment of a socialist market economic system can never excluded the non-public economy. General Secretary Jiang Zemin at the 15th CPC National Congress political report that: " Non- public economy is an important component of China's socialist market economy, individual, private and other non -public economy should continue to encourage and guide the healthy development, so that it is meet the diverse needs of the people , increasing employment, promoting the development of the national economy plays an important role. " this statement very clearly indicates the status of private enterprises in the real economic life .

In the background of "the country back into", are the performances of the private enterprise affected by the more serious? How to run efficiency of the private in the lack of funds under the condition of the enterprise? The study of these problems is conducive for government departments to make the development of the industry development plan. This study is helpful for the enterprise managers to make better policy to make private enterprises more efficient operation. Therefore, in the background of "country back into", the efficiency study about the private enterprises will have a strong application value to the development of private enterprises.

1. LITERATURE REVIEW

As an effective corporate governance system, enterprise performance evaluation is an important way to enhance corporate value. It has been widely used for many years in Western countries. Now enterprise performance has become an important way of enterprise management for market economy country. The research of enterprise performance has been an important field of research. In this paper, we mainly analysis the performance of private enterprises under the background of "the country back into" Charnes, Cooper, & Rhodes,1978 build the DEA method in 1978, Since then, many researchers used the DEA method to study the performance of enterprise, such as Banker, Charnes & Cooper, 1984, Chames, Cooper & Rhodes,1979, Pekka & Luptacik, 2004, Bing, Jun & Huang, 2008. Since Andersen & Petersen, 1993 used the super-efficiency DEA model to solve the problem of effective cell sorting efficiency, the super-efficiency DEA method was carried out in-depth research. Hu & Huang, 2007, summarized the current situation and the problems of science and technology competitiveness of large and medium-sized industrial enterprises. Chen, Lai & Chen, 2005, used EVA method to analyze the business performance, and give the evaluation framework of this method and steps. Zhang, Wang & Wang, 2013, analyzed the production efficiency of the key state enterprises by DEA model. The results showed that the production efficiency of the state enterprises is the higher than other enterprise.

Analysis the research literature of the domestic and foreign, we found that the DEA method has been widely used to study the efficiency of the different decision making units. DEA can effectively reflect the operational efficiency of enterprises. Therefore, we will study the operating efficiency of private enterprise under the expansion conditions of state-owned enterprises. We will analysis the overall efficiency of the enterprises by DEA methods in the environment of relatively unfavorable conditions. In this paper we used the super efficiency DEA method to study the performance of private enterprise under the background of "the country back into". This study can provide a reference for the relevant departments. This study is conducive for private enterprise managers to further clarify the current external environment and provide an empirical basis for the next step in business planning.

2. METHOD INTRODUCTIONS

DEA method is already present research, a new field of mathematical economics and management science crossover study. It is a widely accepted method for large enterprise performance evaluation methods. There are two basic models BCC model and the CCR model, the former constant returns to scale, the latter variable returns to scale. DEA model of decision-making unit is divided into two types of valid and invalid. Ineffective means for its operating efficiency can be portrayed by a number less than 1, but for multiple simultaneous effective decision-making unit (effective cell efficiency values are 1), you can not do a further evaluation, SE-DEA model is an effective means that make up for the deficiencies can not be compared. So that it can be more effective decision-making between the units. Its core is that when a decision-making unit is evaluated, it was excluded from the decision-making unit of the collection. So you can make efficient and effective unit values greater than a 1. For the invalid cell the efficiency values are consistent with classical DEA models.

Data envelopment analysis (DEA) method is an efficiency evaluation method, which was founded by there famous American statisticians Chames, Cooper

& Rhodes, 1987. The DEA method mainly is used to analysis the relative efficiency of decision making units, which have same type inputs and outputs. The advantage of DEA method is that you can carry efficiency rating to multi-input and multi-output complex systems. The CCR and BCC are two basic types and they are the most widely useful type of DEA method. The CCR model assumes that each unit of input yields will not change with the size scale, i.e., the constant returns to scale. Banker relaxed CCR model, and he assumed that the constant returns to scale. The BCC model, which allows variable returns, was with scale decision-making units. The BCC can determine whether a purely technical decision unit returns to scale efficiently with the state, but still not effective technology the unit sort and evaluate the pros and cons. In order to compensate for the lack BCC model, and put forward a number of super-efficiency DEA (SE-DEA), to solve the problem of effective cell sorting efficiency.

Data envelopment analysis (DEA) method is mainly used to analyze the relative efficiency of same type of inputs and outputs for certain decision-making unit. Andersen and Petersen etc optimized the traditional DEA model, and proposed super-efficiency DEA model. Now we look super-efficiency DEA method. Ordinary rules of DEA is equation (1),

$$\min \theta$$
$$s.t.\begin{cases} \sum_{j=1, j\neq k}^{n} \lambda_j X_j + S^- = \theta X_k \\ \sum_{j=1}^{n} \lambda_j Y_j - S^+ = Y_k \\ \lambda_j \geq 0, j = 1, 2, ..., n \\ S^- \geq 0, S^+ \geq 0 \end{cases} \quad (1)$$

The rules of super-efficient DEA methods is equation

$$\min \theta$$
$$s.t.\begin{cases} \sum_{j=1, j\neq k}^{n} \lambda_j X_j + S^- = \theta X_k \\ \sum_{j=1, j\neq k}^{n} \lambda_j Y_j - S^+ = Y_k \\ \lambda_j \geq 0, j = 1, 2, ..., n \\ S^- \geq 0, S^+ \geq 0 \end{cases} \quad (2)$$

where X_j, Y_j are the decision-making unit matrixes of inputs and outputs, λ_j is the planning decision variables. S^- and S^+ are the relaxation matrix of input and output respectively. θ is performance of the different units, that is a vector distance different cell surface to the efficient frontier. What θ is larger value indicates higher performance.

The decision-making unit of the CCR model is divided into two categories: active and inactive. For multiple simultaneous effective decision-making units, the CCR model is unable to make further evaluation. The super-efficiency DEA can make up for this shortcoming and it is able to compare between effective decision making units. The basic idea is that when we evaluate a decision-making unit, the decision-making unit is excluded from the set of decision-making unit. When we calculate the efficiency value of the point B (Fig. 2), the efficiency value is excluded from the decision-making unit of reference set.

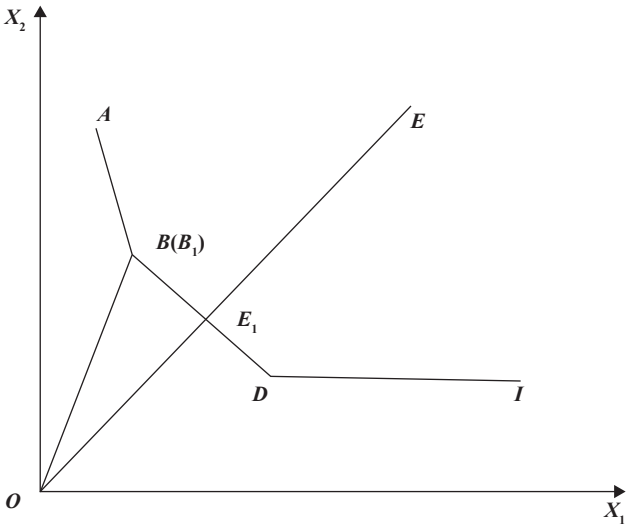

Figure 1
The Schematic of DEA Model

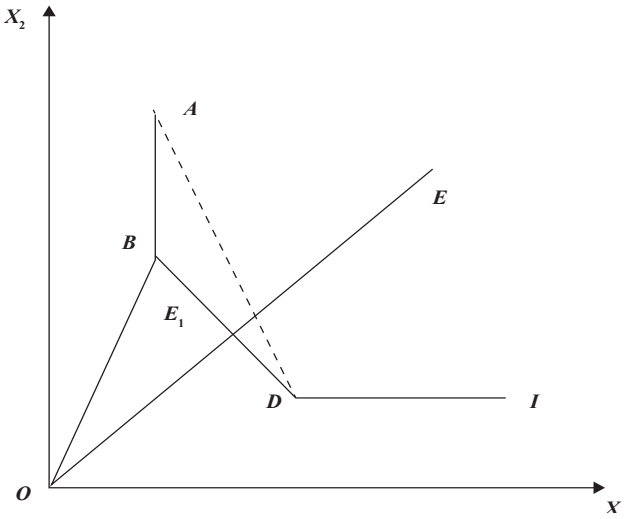

Figure 2
The Schematic of SE-DEA Model

3. EMPIRICAL ANALYSES

3.1 Indicator Selection and Data Sources

In view of the micro-economic theory, the company's main input factors included capital and labor, and the output included production value and yield. Based on

this idea and the indicators desirability, we selected asset-liability ratio, total assets and Accrued payroll as the input indicators and selected total revenue, gross profit and earnings as output indicators

This data comes from the RESSET database. We selected 100 private enterprises in China's annual corporate financial data from 2008 to 2012. In order to maintain a consistent time, we excluding missing data, and ultimately collected 385 samples.

3.2 Empirical Private Enterprise Performance

In this article, we used the X1, X2 and X3 respectively represent input indicators asset-liability ratio, total assets and employee benefits, and let the Y1,Y2 and Y3 respectively represent output indicators total revenue , gross profit and net profit (Unit to ten million) .

Table 1 shows the private enterprise's average level of ultra-efficient that was calculated by SE-DEA method from 2008 to 2012. In view of the average level of ultra-efficient, it was not difficult to find that the average level of ultra-efficient was overall upward trend from 2008 to 2012, but the average level of ultra-efficient was low, and only 0.7658. It can be seen that the overall efficiency level of enterprises had been improving in recent years from Table 1. But the overall level of efficiency is low. One reason was that the private enterprises were suppressed under the background of "the country back into". From the indicators of the median (median) and the standard deviation (stdev), the median of the efficiency was average of 0.43244, and the standard deviation was the average of 1.5069. This indicated that the efficiency level was lower about half of private enterprisers. The ultra-efficiency levels half of the enterprises were lower than 0.7658. The differences among the efficiency of private enterprise were more serious. Therefore, the government needs to pay more attention to the development of private enterprises, the rational allocation of corporate resources, so as to improve private enterprise production environment.

Table 1
The Average Efficiency Level of Private Enterprise From 2008 to 2012

Time	Mean	Median	Stdev
2008	0.5738481	0.4053	0.6756259
2009	0.6030844	0.3639	0.7998734
2010	0.8702662	0.4059	2.0338227
2011	0.6748325	0.4362	0.9815787
2012	1.1074299	0.5509	3.0437724
Mean	0.7658922	0.43244	1.5069346

For a more intuitive analysis of the performance level of private enterprises, we plotted the mean and median of enterprise performance level in the same coordinate system. Figure 3 shows that the mean of enterprise ultra-efficient level were greater than the average of the median corporate super efficient from 2008 to 2012.

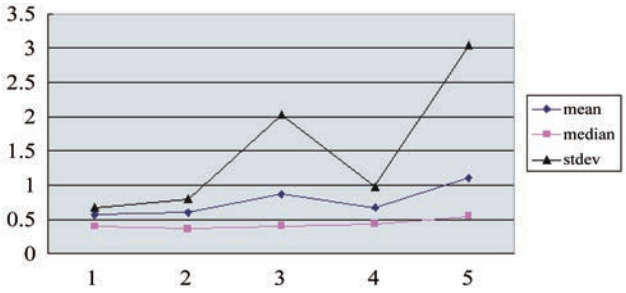

Figure 3
The Histograms of Mean, Median and Stdev of Super Efficient Private Enterprise From 2008 to 2012

The Figure 4 shows that the median of super-efficient enterprise was almost all less than 0.5. This indicated that at that time, although the average level of private enterprises was continuously improved, but companies operating efficiency was lower. So the private enterprise needed continue to optimize the corporate structure, and further improve efficiency.

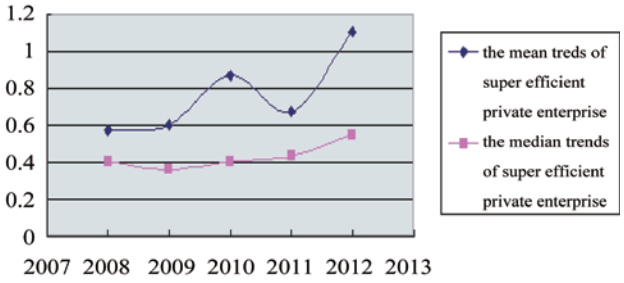

Figure 4
The Mean and Median Trends of Super-Efficient Private Enterprise From 2008 to 2012

CONCLUSIONS

In this paper, we used the super-efficient DEA method to analyze the performance of Chinese private enterprises. Talked 100 best private enterprises from 2008 to 2012 in China as the representative, we analyze the performance of private enterprises. The empirical results showed that the efficiency levels of the private enterprises had continuously improved from 2008 to 2012, but the overall efficiency level of the private enterprise was lower, and the super-efficient level of different private enterprise was quietly different. There existed large different among the private companies, and nearly half of the efficiency values of the enterprises were at 0.7658 or less. The living environment of the private enterprises had been extruded by "the country back into". Therefore, the state should pay more attention to the living environment of the private enterprises, the private enterprises should play its due the potential to promote the country's sustainable development.

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